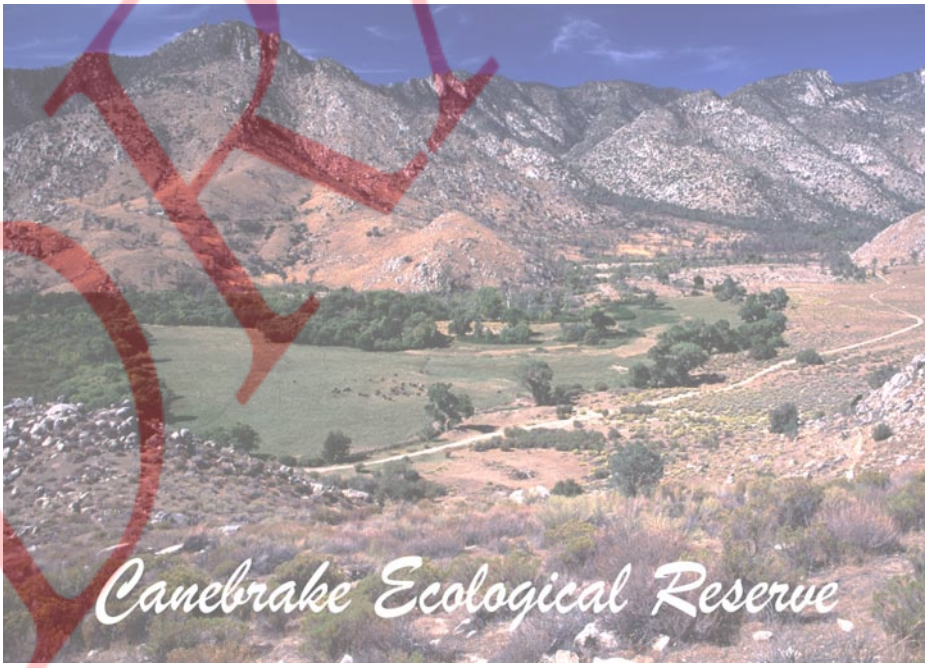
State of California
The Resources Agency
Department of Fish and Game

Draft Land Management Plan
For
Canebrake Ecological Reserve



September, 2004

Canebrake Ecological Reserve Final Draft Management Plan

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San Joaquin Valley - Southern Sierra Region

Canebrake Ecological Reserve Final Draft Management Plan

Table of Contents

Page #

I. INTRODUCTION

A. Purpose of Acquisition

The Canebrake Ecological Reserve (CER) was acquired primarily to provide protection for a unique and diverse assemblage of plant, animal, and fish species, and their habitats, along the South Fork of the Kern River, upstream from Lake Isabella. Forty one rare elements (including six communities, 22 birds, 4 mammals, one reptile, three insects, and five plants) occur on or near the CER and as many as 227 species of birds utilize its habitats. The Great Valley Cottonwood Riparian Forest, a rare community type recognized in the California Natural Diversity Database (CNDDB), is a key habitat for many of these species and occurs over a considerable area of the property. Protection of this special habitat was a primary purpose for the acquisition of the CER.

Occurring in a southern Sierra Nevada montane setting between the Mojave Desert and lower San Joaquin Valley, the CER includes a variety of habitat types. Four of the six ecoregions found in California are represented on this one piece of land. The resultant biodiversity is rich and unique and its protection was also a purpose of acquisition.

Protection of approximately 4.5 miles of riparian wildlife movement corridor was also a purpose of acquisition since the CER is strategically located in relation to wildlife habitat protection in the southern Sierra Nevada. The footprint of the CER forms a north-south wildlife movement corridor between the U.S. Forest Service (USFS) Domeland Wilderness and U.S. Bureau of Land Management (BLM) wilderness to the north and BLM and USFS lands to the south. It is also located at the junction of Canebrake Creek and the South Fork Kern River and forms an east-west wildlife movement corridor.

Lands administered by the USFS and BLM surrounding the CER have historically been inaccessible along their boundaries in the vicinity of the towns of Canebrake and Onyx. The acquisition of this Ecological Reserve was also envisioned to provide public access to these lands.

B. Acquisition History

The acquisition of the CER was pursued as part of the South Fork Kern River Conceptual Area Protection Plan (CAPP). This CAPP was developed primarily to protect the Great Valley Cottonwood Riparian Forest occurring along the South Fork Kern River and includes virtually all examples of that habitat type occurring in the lower portion of the river known as the South Fork Valley. The CAPP was developed in accordance with the California Riparian Habitat Conservation Program of the Wildlife Conservation Board (WCB) which was in turn coordinated with the Partners in Flight program endorsed by the WCB, California Department of Fish and Game (Department), The Nature Conservancy (TNC), and National Audubon Society as an effort to protect critical habitat for a number of sensitive riparian dependent species. Acquisition efforts were also

coordinated with TNC habitat protection at their Kern River Preserve on the South Fork Kern River, and with the USFS regarding the South Fork Wildlife Area jointly managed with the Department.

The acquisition of the Cap Canyon Unit of the CER was accomplished as a result of the Cap Canyon Land Acquisition Evaluation (CCLAE). This document was written to provide for the protection of the current Department holdings on the CER by conserving the neighboring, upstream lands in Cap Canyon. The CCLAE established that in order to provide for complete conservation of riparian habitats in the South Fork Valley, adjacent uplands, alluvial fans, and canyons must also be protected to maintain watershed ecology. Since the original CAPP did not encompass these important appurtenant lands, it was revised and replaced with the Canebrake CAPP.

Currently, there are efforts underway to implement the acquisitions called for in the Canebrake CAPP that will continue the great strides already made towards the conservation of the vital natural resources of the South Fork Valley. As new acquisitions are made, this Management Plan (Plan) will be revised and updated to reflect those changes.

For reference, a chronology of acquisition events appears as follows:

Date (mo/yr)	Event	Initiator(s)
9/89	South Fork Kern River CAPP prepared	Department-R4/TNC
3/90	South Fork Kern River CAPP revised	Department-R4/TNC
7/92	Acquisition recommended to WCB (1200+ acres)	Department-R4/TNC
9/92	TNC agrees to acquire property from Page pending Allen land exchange for easement	TNC/Page/Allen
9/92	TNC grants property to CDFG (1290.02 acres)-Deed dated	TNC/CDFG
9/92	Draft Interim CER Management Plan prepared	Department-R4
11/92	WCB moves to acquire South Fork Kern River Ecological Reserve (property) for $2,186,000.00 Prop 70 funds (1290.02 acres)	WCB
11/93	Escrow closure pending Kern Co. Health Dept. satisfaction regarding fuel tank	WCB/KCHD

	removal and ground water monitoring (9 months)-$50,000 monitoring costs held in escrow	
12/93	TNC & Allen reciprocal easement agreements signed	TNC/Allen
1/94	TNC receives property from Page	TNC/Page
1/94	Reciprocal easements recorded	TNC/Allen
1/94	TNC grants property to Department (1290.02 acres)-Deed recorded	TNC/WCB
1/96	Department designates property as Ecological Reserve	Department
3/01	CCLAE drafted and approved	Department
8/02	WCB moved to acquire CC Unit	WCB
4/03	CC Unit acquired and added to CER	WCB/Department
10/03	Canebrake CAPP drafted and approved	Department

C. Purpose of This Management Plan

1) The Plan guides management of habitats, species, and programs described herein to achieve the Department's mission to protect and enhance wildlife values.

2) The Plan serves as a descriptive inventory of fish, wildlife and native plant habitats which occur on or use this property, and outlines appropriate public uses of these resources.

3) The Plan provides an overview of the CER's operation and maintenance, and personnel requirements to implement management goals and objectives. It serves as a budget planning aid for annual Regional budget preparation.

4) The Plan provides a description of potential and actual environmental impacts and subsequent mitigation which may occur during management, and contains environmental documentation to comply with State and Federal statutes and regulations.

II. PROPERTY DESCRIPTION

A. Geographical Setting

The CER sits between 2,700 and 4,000 feet elevation in the South Fork Valley approximately 20 miles east of Lake Isabella, 5 miles east of Onyx and adjacent to State Highway 178 in northeastern Kern County (See Figures 1 and 2). It is reached most conveniently from Los Angeles by state highway 14 to Freeman Junction, 44 miles north of Mojave, thence 17 miles west over Walker Pass on highway 178 to the Canebrake area. To reach the CER from the north, access is gained by taking State Highway 178 east from State Highway 99, traveling approximately 66 miles east of Bakersfield, past Lake Isabella to the town of Onyx.

Public access to the Bloomfield Ranch Unit (BR Unit) is gained directly off of State Highway 178, near the northern point of the ER, where a small parking lot sits. Public access to the Cap Canyon Unit (CC Unit) is also gained off of 178, approximately one mile south of the other public access point. There is no parking lot and only a dirt road is available, that is also used by neighboring land owners for access.

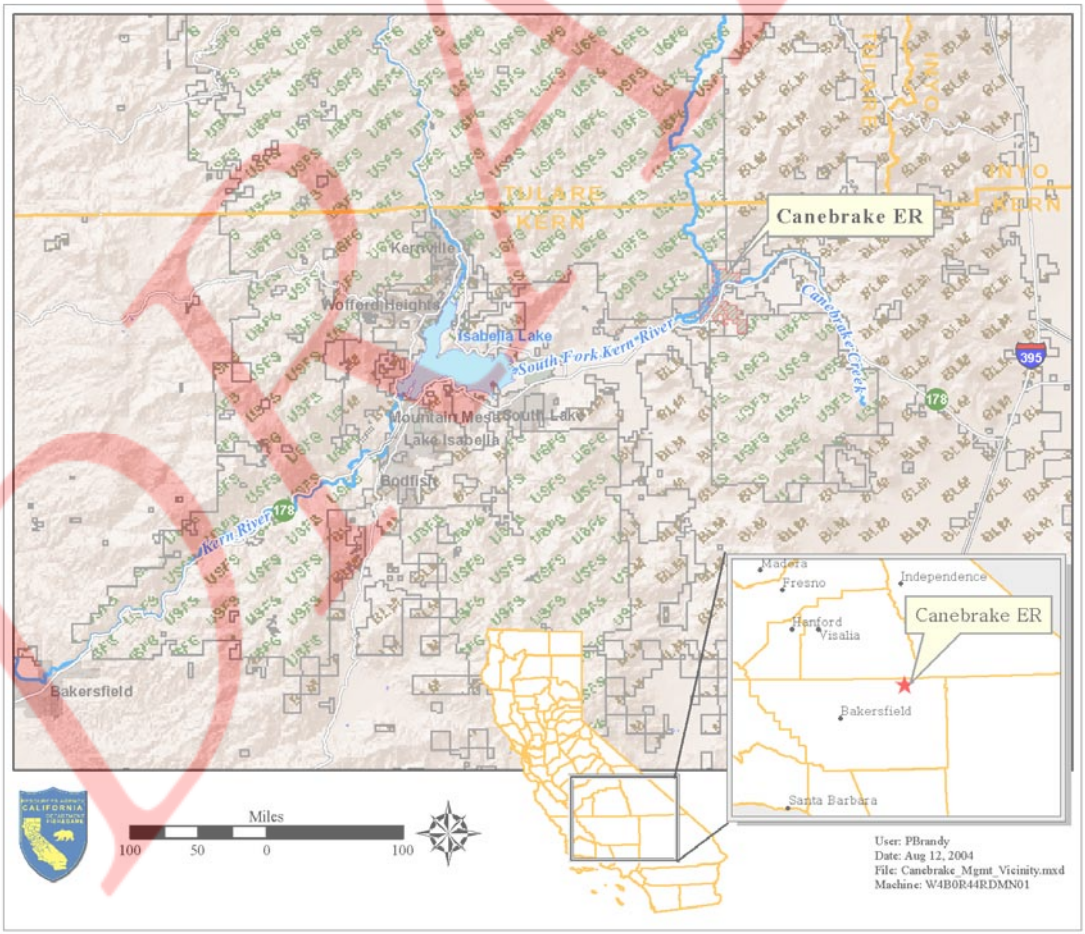


Figure 1 - Vicinity Map

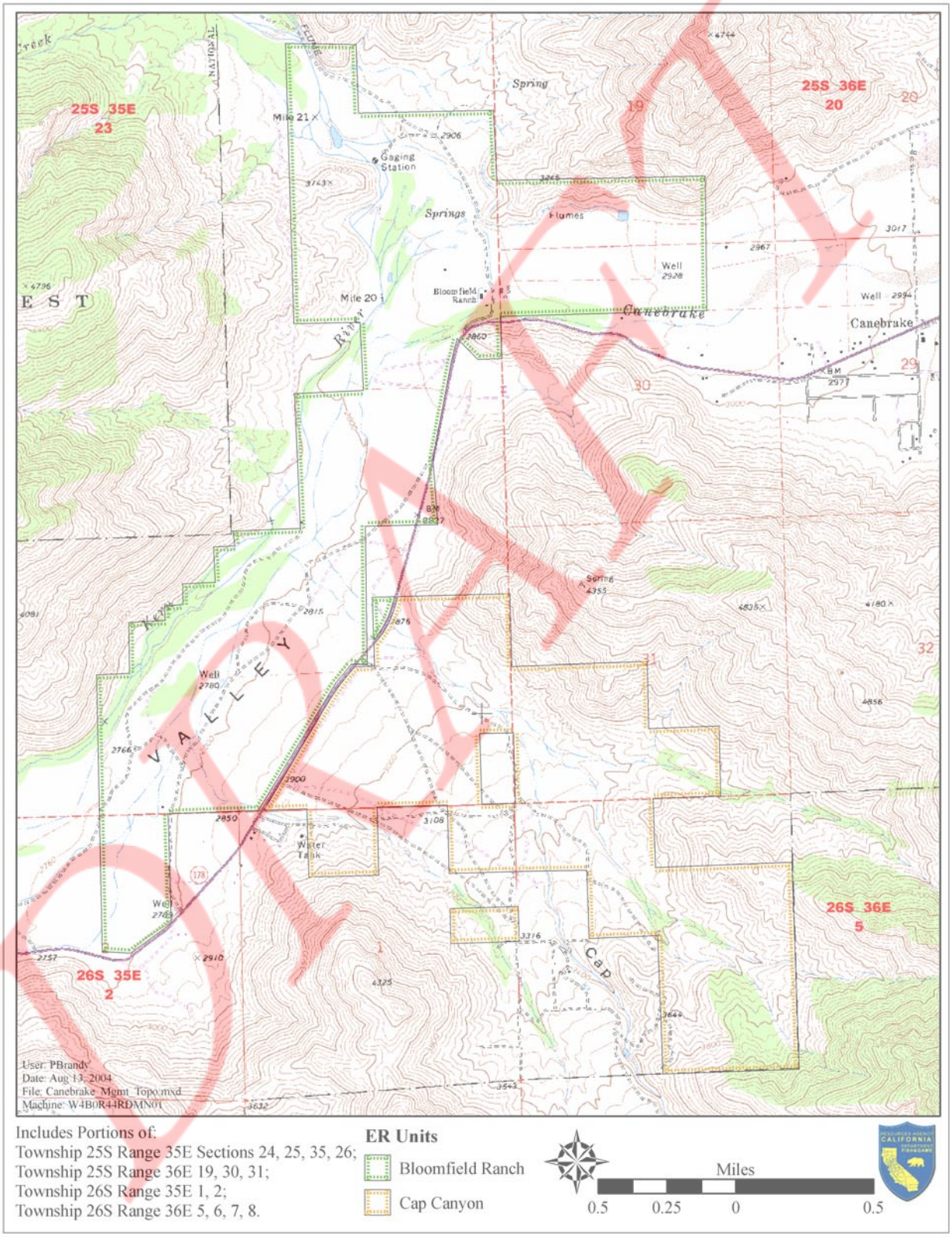


Figure 2 - Property Map

B. Property Boundaries and Adjacent Lands

The property can be located on the U.S.G.S. 7.5 minute Onyx Quadrangle map. Portions of the CER lie within sections 24, 25, 35 & 36, township 25 south, range 35 east, sections 19, 30, & 31 township 25 south, range 36 east, sections 1 & 2, township 26 south, range 35 east, and sections 5, 6, 7, & 8, township 26 south, range 36 east, M.D.B.M., in Kern County. Several of the attached maps show the property boundaries and adjacent land ownership. A list of parcels and legal locations can be found in Appendix A.

Lands included within the CER have been utilized for livestock ranching under private ownership for over 100 years. Currently, grazing rights on the property are being leased to an on-site resident who also acts as caretaker.

There are extensive tracts of public lands surrounding the CER, managed by USFS and BLM. Directly to the north and to the west lies the Domeland Wilderness of the Sequoia National Forest, encompassing 62,695 acres. To the south lies the Scodie Mountains which include the southern terminus of the Sequoia National Forest. This area contains many of the same habitats found in the Domeland Wilderness. BLM lands to the north and east of the property have recently been designated wilderness under the Desert Protection Act of 1994.

A variety of other ownerships and uses surround the CER. Approximately 600 acres of lands adjacent to the northern end, and southern portion of, the BR Unit are owned and administered by TNC, the Allen Wildlife Sanctuary, and Carl Allen. These lands are managed through a conglomeration of easements and agreements towards the purpose of natural resource protection and are conservation value oriented. Also adjacent to the western boundary of the BR Unit is the White Blanket Reservation. Private residences, as well as a self contained ranching operation are the primary uses of that property. Several other small parcels adjacent to the other boundaries of the BR and CC Units are used exclusively for private residences.

Immediately downstream and adjacent to the southwestern end of the CER is the Smith Ranch. This 700 plus acre property is currently used primarily for cattle ranching, as is most of the other properties that occur downstream, between the CER and lake Isabella.

C. Geology, Soils, Climate, Hydrology

The Sierra Nevada Mountains, as we see them today, began uplift and formation less than 60 million years ago. Bedrock is primarily of metamorphic-granitic origin. Erosion, either by glacial ice or water, has led to the formation of the Kern River Valley and its tributary valleys. The BR Unit of the CER lies in the Kern River drainage where its tributaries, the South Fork Kern River and Canebrake Creek come together. The CC Unit comprises the lower portion of the adjacent alluvial fan canyon that drains the Scodie Mountains to the south. In this canyon, a minor, seasonal watercourse passes

through the CER to the South fork Kern River. In the vicinity of the CER the slope of these watercourses, especially the South Fork Kern River, which is very steep and eroding at its upper reaches becomes much shallower, depositing minerals and organic material eroded from upper segments of the drainage. Consequently, soils tend to be deeper and more developed here than along most Sierran rivers.

Property soil profile from north to south ranges from gravelly sandy loam soils greater than 60" deep on 5-15% slopes to loamy coarse sand equally as deep on 0-5% slopes, very deep loamy fine sand on 0-5% slopes to very deep fine sandy loam soils on 0-2% slopes and eventually to very deep loamy sand on 0-2% slopes (Figure 3). Soil permeability ranges from low at the northern end of the property to moderately rapid at the southern end. As might be expected, these deep moist sedimentary soils are well suited to the development of cottonwood/willow riparian habitat. The extent of these soils on the CER suggests this habitat type could be encouraged beyond current distribution limits throughout portions adjacent to the South Fork Kern River.

The majority of precipitation in the vicinity of the CER occurs between December and March. The mean annual precipitation is approximately 8 inches, a minor amount occurring as snow. Mean annual temperature is approximately 60º F with summer temperatures reaching 95º F (record temperatures in excess of 110º F) and winter temperatures dropping to around freezing (record temperatures being below 10º F). There is an estimated 200-220 frost free days each year.

The primary surface hydrologic feature of the CER is the South Fork Kern River, entering from the north and exiting at the southwest end. Canebrake Creek, a significantly lesser flow of water, enters the property from the east and joins the South Fork Kern River west of the Bloomfield Ranch complex (Ranch). Over a century ago, a ditch system was excavated to draw water from the river to provide for irrigation of pastures on the CER and the downstream ownerships of the Smith and Onyx Ranches (Figure 4). The northern most outtake originates above the gauging station at the northern end of the CER, and delivers water to the Bloomfield Ranch's ditch network. The second outtake originates west of the Ranch and generally parallels the river delivering water off the property to the southwest, onto the Smith Ranch. A third outtake located at the southwest end of the BR Unit provides water to the Onyx Ranch's ditch network. A pond of less than one acre of open water occurs adjacent to the main river drainage northwest of the Ranch.

A relatively high water table allows subsurface water to appear at springs northwest of the Ranch periodically, and maintains moist pasture conditions in a portion of that area. This pasture area is also maintained through managed flooding from the Bloomfield ditch.

Wildfire has likely occurred periodically throughout the history of the property, especially within the drier habitat types. The most recent burn occurred over approximately 100 acres along the northern portion of the property in June 1994.

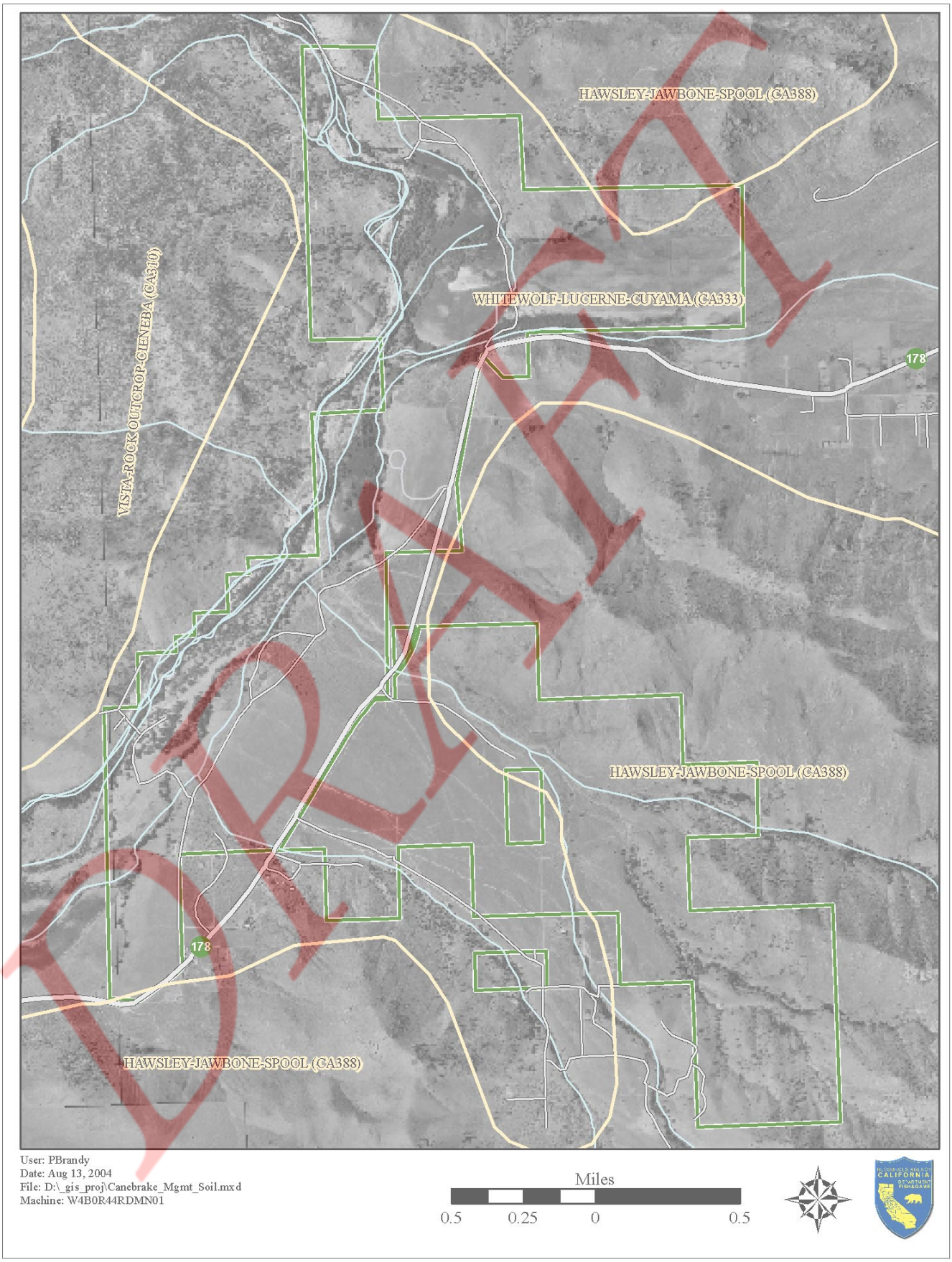


Figure 3 - Soils Map

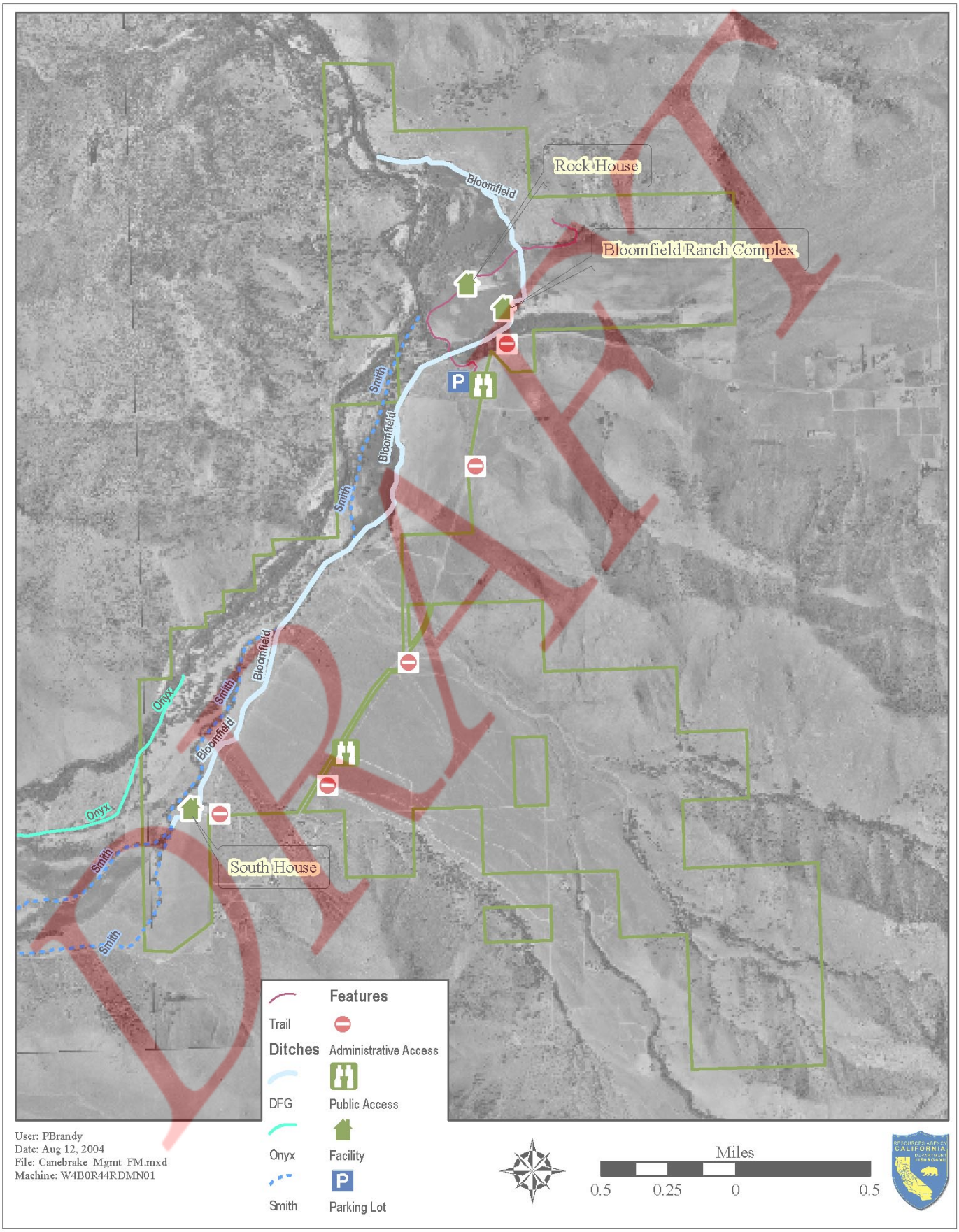


Figure 4 - Facilities Map

D. Cultural Features

The entire South Fork Valley was originally inhabited by Tubatulabal Indians, a subgroup of the Uto-Aztecan family. The Tubatulabal probably moved into the South Fork Valley as early as 1,000 B.C. and subsisted by hunting rabbits, deer and fish, as well as collecting acorns and pinyon nuts for their meals. A pre-European contact site has been identified near the property boundary to the north and it is likely other prehistoric archeological sites occur on the property as well. Settlers came to the South Fork Valley in 1835. Artifacts of early settlement, including a wood flume and a horse-drawn wagon, also occur on the property. An old stone house (Rock House) of unknown age but probably dating to at least the very earlier twentieth century is located just to the west of the Ranch. CEQA guidelines require an archeological survey be completed to document sites of significance prior to activities which might impact those sites. A survey of this type, including the identification of any historical resources (pursuant to Executive Order W-26-92), should be conducted as an adjunct to this plan. Any sites or structures warranting protection will be protected from potential impacts of management plan implementation, by avoidance if possible or other means as appropriate. In addition, any sites of archeological significance discovered during management activities will be investigated, and protected if required, before continuing.

Most of the structures currently existing on the CER occur near the Ranch. The Ranch includes the main house, two other houses (a bunk house and residence in poor repair), two barns and a series of corrals, all in various states of conditions and utility. Another house at the southern end of the BR Unit, hereafter referred to as the South House is in habitable condition and includes an out building (garage/workshop). The South House was recently fully renovated and furnished. Wells for domestic water supply exist at both facilities. There are no structures on the CC Unit but there is a single well adjacent to Highway 178 near the main access road.

A dirt road connects Highway 178 with the Ranch and continues through that area to the northern end of the property. Side roads off this main road access fields to the east and west. The South House is accessed by a dirt road from Highway 178 which continues to the northeast basically paralleling the highway. Networks of dirt roads exist mostly on the perimeter of the CC Unit. All of these roads are serviceable but require periodic maintenance. There is also a parking lot and public access trail off of Highway 178, near the northern end of the CER. Power lines generally follow the main access roads to the houses, connect wells with housing power, parallel Highway 178 near that road, and connect that highway power line with the Allen/TNC properties to the west from near the Ranch.

Fencing is generally in place around the perimeter of the property and around pastures. Fences are in serviceable condition with some sections being in better condition than others. Some maintenance and enhancements are required to bring the condition of the entire fence system up to optimal Department standards.

The U.S. Army Corps of Engineers maintained a gauging station on the South Fork Kern River prior to its destruction in the June 1994 fire. The station has been subsequently reestablished. The USFS currently maintains an air quality monitoring station adjacent to the South House.

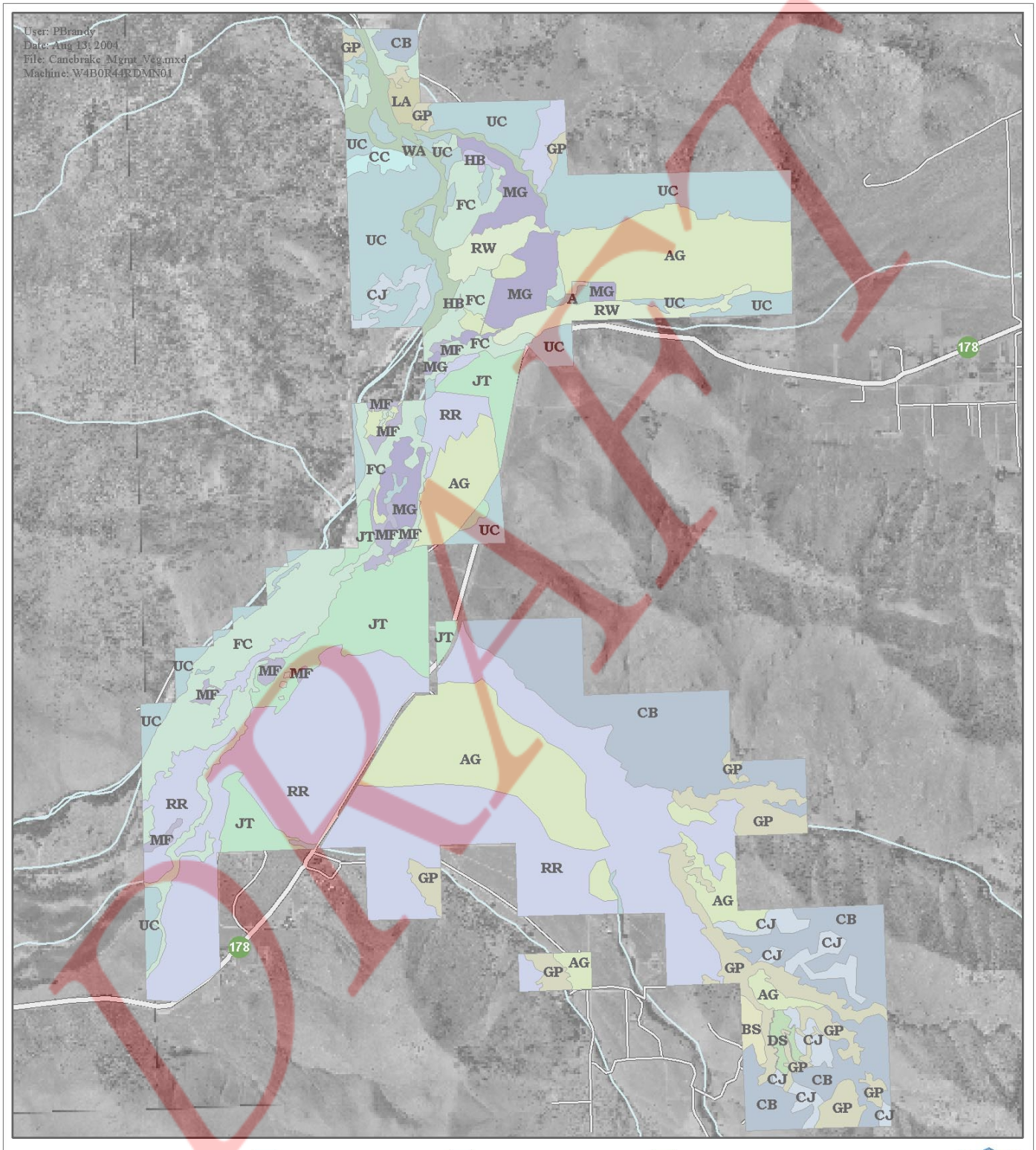
III. HABITAT AND SPECIES DESCRIPTION

A. Vegetation Communities, Habitats and Plant Species

The CER has a broad assemblage of habitat types and vegetation communities representing four of the six ecoregions found in California. As per the California Wildlife Habitats Relationship System (WHR), there are basically ten habitat types occurring on the property. These are valley foothill riparian, valley foothill hardwood-conifer/blue oak-gray pine, sagebrush, joshua tree, riverine, lacustrine, fresh emergent wetland, wet meadow, pasture, and cropland. A vegetation inventory conducted during April of 2004 yielded an almost complete classification of the vegetation on the CER. 3,708 acres of the total 4,008 acres were mapped using the general habitat descriptions based on the classification described in *A Manual of California Vegetation* (Sawyer-Keeler Wolf 1995). A total of 16 vegetation habitat types were delineated. A table showing those types and their respective acreages is listed below. Also, a map illustrating the distribution of the vegetation types is included as Figure 5.

Vegetation Type (Sawyer-Keeler Wolf)	Acreage
Big Sagebrush	8 acres
California Annual Grassland	868 acres
California Buckwheat	444 acres
California Juniper	415 acres
Ceanothus cuneatus	9 acres
Desert Purple Sage	51 acres
Fremont Cottonwood	291 acres
Gray Pine	226 acres
Himalayan Blackberry	15 acres
Joshua Tree	174 acres
Lupinus albifrons	9 acres
Mediterranean Grass	90 acres
Mulefat	51 acres
Red Willow	49 acres
Rubber Rabbitbrush	952 acres
White Alder	52 acres
Anthropogenic (Houses/Facilities)	4 acres

Table 1 - Vegetation Classification of the CER



Habitat

- Anthropogenic (A)
- Big Sagebrush (BS)
- California Annual Grassland (AG)
- California Buckwheat (CB)
- California Juniper (CJ)
- Ceanothus cuneatus (CC)
- Desert Purple Sage (DS)
- Fremont Cottonwood (FC)
- Gray Pine (GP)
- Himalayan Blackberry (HB)
- Joshua Tree (JT)
- Lupinus albifrons (LA)
- Mediterranean Grass (MG)
- Mulefat (MF)
- Red Willow (RW)
- Rubber Rabbitbrush (RR)
- White Alder (WA)
- Unclassified (UC)

Miles

0.250.125 0 0.25

Valley foothill riparian habitat occurs over 11% of the CER and includes 443 acres of vegetation types classified as Fremont Cottonwood, Red Willow, Mulefat, and White Alder. This habitat type is characterized by the presence of Fremont cottonwood (*Populus fremontii*) and red willow (*Salix laevigata*) with an understory of various herbaceous species occurring adjacent to the river, creek and ditches. Stands are mature over the majority of its distribution on the property. This habitat type is very productive and supports a large number of animal species, including endangered, threatened, and sensitive species. The CNDDB classifies this habitat as Great Valley Cottonwood Riparian Forest. Formerly widespread, valley foothill riparian habitat is declining throughout California and is currently the focus of preservation and protection efforts wherever it occurs.

Valley foothill hardwood-conifer/blue oak-gray pine occurs over 6% of the property. Typical of the higher elevations of its distribution, this habitat type is characterized primarily by the presence of gray pine (*Pinus sabiniana*) with a few oaks occurring in some locations. This habitat type includes the 244 acres classified as Gray pine, Ceanothus cuneatus, and Lupinus albifrons above. Although not generally associated with this habitat type, California juniper (*Juniperus californica*) is also found alongside the gray pine habitats on the CER. This habitat was classified separately and comprises 415 acres, or roughly 10% of the Ecological Reserve. These habitats are found mostly along the higher elevations of the CER and occur in abundance in the CC Unit.

Sagebrush occurs over 36% of the CER. Although identified as sagebrush habitat by WHR, this habitat type is characterized much less by sagebrush (*Artemisia tridentata*) than by rabbitbrush (*Chrysothamnus nausiosus*) on the property and may be more correctly identified by the CNDDB rabbitbrush scrub designation. It occurs on the low slopes east of the river riparian zone and throughout the CC Unit. It includes the habitat types classified as Big Sagebrush, California Buckwheat, and Rubber Rabbitbrush above. It appears to be the primary habitat type disturbed by cultivation efforts except possibly in the field east of the Ranch. Where this shrub habitat occurs east of the river in the southern half of the property it is associated with an overstory of Joshua tree (*Yucca brevifolia*). Joshua tree occurs over 174 acres, or 4% of the property and is also associated marginally with valley foothill riparian habitat. The stands of Joshua tree on the property represent the westernmost distribution of this species in California. California Annual Grassland occurs over 868 acres, or roughly 22% of the CER. It is found throughout the CC Unit, and in the northern and central portions of the BR Unit. It is characterized by the presence and dominance of many species of annual grasses such as *Bromus* and *Erodium*.

Riverine habitat, characterized by intermittent or continually flowing water, occurs in 6 miles of river, creek and ditches on the property. The South Fork Kern River provides habitat for various fish species. This habitat type also provides important forage for a number of wildlife species. Lacustrine habitat occurs over less than 1% of the property. This habitat type is characterized by standing water. The pond west of the Ranch is the only example of this habitat type on the property. The open water of this pond is less than one acre as the shores support a dense stand of cattails. This cattail stand

represents the fresh emergent wetland habitat which occurs over less than 1% of the property. Wet meadow habitat occurs over 1% of the property primarily north of the ponded area. This meadow area may vary in size annually depending on water table fluctuations, precipitation and occasionally beaver damming of the pond outflow. This habitat type is characterized by very moist soils which support a variety of low growing herbaceous species.

Irrigated pastures have been developed on the CER to support cattle grazing. They are classified as Mediterranean Grass above and occupy 90 acres, or approximately 3% of the CER. This habitat type is characterized by grasses and herbaceous species promoted through irrigation and livestock grazing manipulation to provide forage. These areas also provide forage for wildlife and if allowed to gain height may provide habitat for ground nesting. Situated adjacent to some of these pastures is the last habitat type classified on the CER. This habitat type is the Himalayan Blackberry and is approximately a total of 15 acres located in the northern portion of the BR Unit. This habitat is a dense monotypic stand that provides nesting cover for the tricolored blackbird (*Agelaius tricolor*), a California Species of Concern. A complete botanical inventory of the property has not been completed. A partial list of plant species occurring on the property is presented in Appendix B.

B. Animal Species

The variety of habitats seen on the property support a large number of wildlife species. WHR identifies 359 species of wildlife, including 227 birds, 83 mammals, 40 reptiles, and 9 amphibians as potentially occurring on the property. The California Natural Diversity Data Base (CNDDB) reports a total of 287 species of birds occurring within the watershed and non-breeding use of the property by 93 bird species. In addition, the Draft Interim Management Plan reports 100 species of butterflies occurring on the property. A complete list of wildlife species expected to occur on the property is presented in Appendix C.

Six species of fish are known or expected to occur in the waters of the property. These include:
Sacramento suckers (*Catostomus occidentalis occidentalis*)
hardhead (*Mylopharodon conocephalus*)
Sacramento pikeminnow (*Ptychocheilus grandis*)
common carp (*Cyprinus carpio*)
California golden trout (*Oncorhynchus mykiss aguabonita*) (unlikely to occur—at higher elevations)
Kern River rainbow trout (*O. m. gilberti)—likely used to occur, but not now*
brown trout (*Salmo trutta*)

Common carp were introduced to Lake Isabella and have made their way upstream to the property. The three trout species listed above, the native California golden trout and Kern River rainbow trout, and the non-native brown trout, are established upstream of the property. The California golden trout is a California Species

of Special Concern and federal category 2 candidate for listing. The Kern River rainbow trout, also a California species of Special Concern, is a state candidate species for listing as threatened. The brown trout is expected to occur on the property,, but it is not likely that native salmonids inhabit the property. It is speculated that the Kern River rainbow was the more common historical inhabitant and that the California golden trout occurred at higher elevations (Moyle 2002). If rainbow trout occur there now, they are likely of hatchery genetic origin. It is rare to find native rainbow strains inhabiting areas where brown trout or other non-native fish occur. In addition, several species of nonnative warmwater fish have been introduced into the watershed (notably Lake Isabella) and are likely to occur in the SF Kern River. These include largemouth and spotted bass (*Micropterus salmoides* and *M. punctulatus*), bluegill (*Lepomis macrochirus*), green sunfish (*L. cyanellus*), white and black crappie (*Pomoxis annularis* and *P. nigromaculatus*), and several catfish and bullhead species (Ictaluirdae). A thorough inventory of the waters on the property is necessary to assess the fishery on the site.

C. Threatened, Rare or Endangered Species

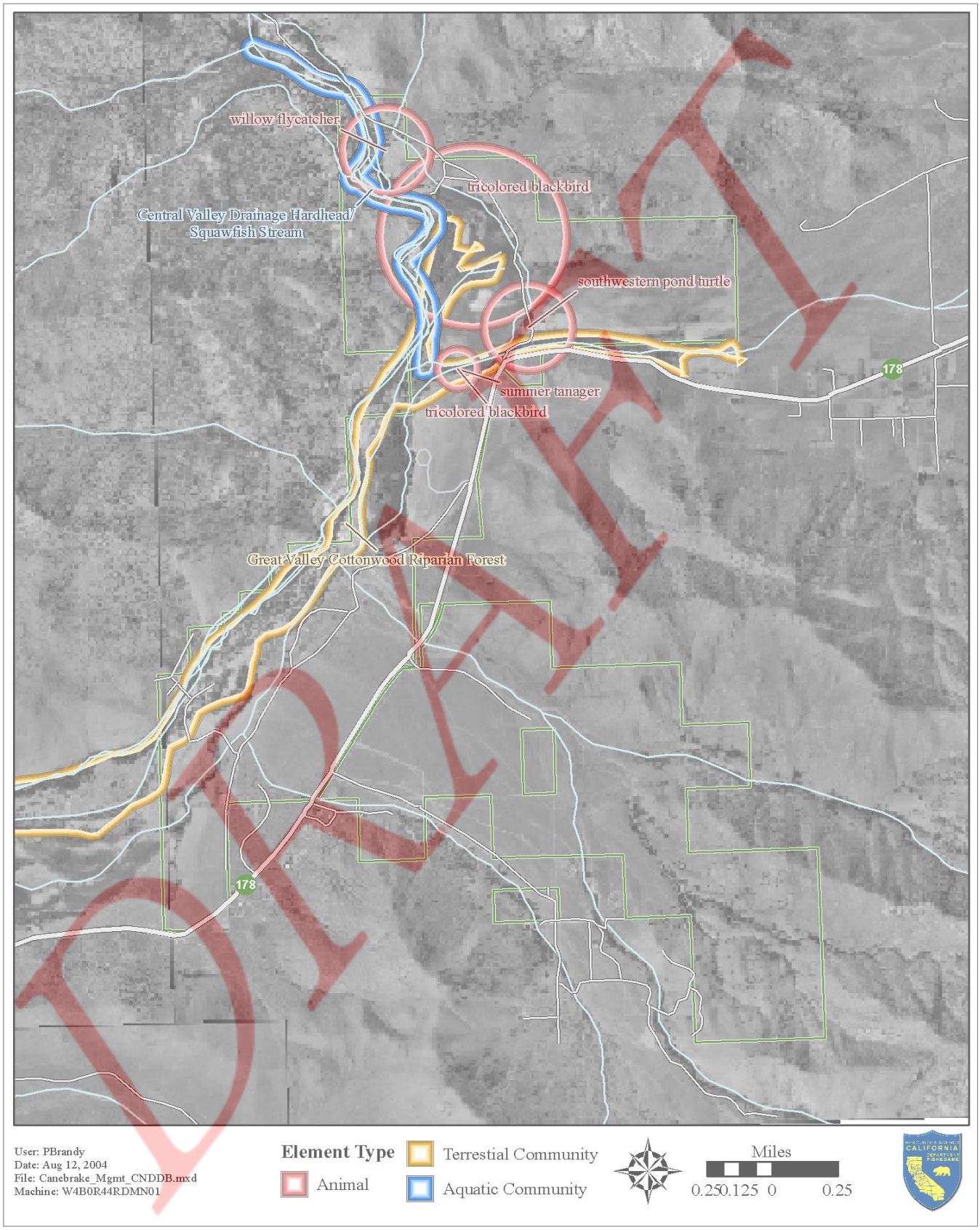
The WHR species list includes 92 vertebrate species recognized as sensitive which may occur on the property, including 49 birds, 28 mammals, 11 reptiles, and 4 amphibians. CNDDB identifies 27 rare vertebrate species elements occurring or potentially occurring on the CER. These include 22 birds, 4 mammals, and one reptile. In addition, CNDDB also identifies 3 listed insect species as occurring on the property and one species of moth which although potentially occurring may be extinct. Species lists are presented in Appendix B.

All species, especially sensitive species, are important in management considerations. However, three of sensitive species are of particular interest in relation to the property and habitat management. These are the yellow-billed cuckoo (*Coccyzus americanus* var. *occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*) and southwestern pond turtle (*Clemmys marmorata*). Habitat requirements of the yellow-billed cuckoo include large areas of valley foothill riparian habitat and although it has not been observed on the property it is known to occur nearby and could be expected to utilize the property if key habitat were developed there. It is estimated that 5-10 pairs of this bird could utilize the property if sufficient habitat were developed. The highest breeding population of the willow flycatcher in California occurs in the South Fork Kern River Valley. The property is within critical habitat for the willow flycatcher and this species could be expected to increase its breeding population size considerably with development of valley foothill riparian habitat, especially with a dense understory component. The southwestern pond turtle is known to occur on the property, in the ponded area west of the Ranch. Expansion of the riparian zone and management of cattle in that area could be expected to benefit that species as well.

Six sensitive (rare) plant species either do occur or have the potential to occur on the CER. These include the alkali Mariposa lily (*Calochortus striatus*), Nine Mile Canyon phacelia (*Phacelia novenmillensis*), Calico monkey flower (*Mimulus pictus*), Onyx Peak bedstraw (*Galium angustifolium onycense*), Kern County evening primrose

(*Camissonia kernensis kernensis*), and Charlotte's phacelia (*Phacelia nashiana*). All of these species are considered rare and have been placed on the CNPS list. The alkali Mariposa lily is a perrenneial herb that blooms from April through June and typically occurs in alkaline meadows, chapparal, and chenopod scrub habitats of the region. The Nine Mile Canyon phacelia is an annual herb that blooms in May and typically grows in open areas in sandy to gravelly soils, in pinyon/juniper woodland or coniferous forests. The Calico monkey flower is an annual herb that blooms from April through May and occurs in granitic soils, in cismontane woodlands and broadleaved-upland forests. The Onyx Peak bedstraw is a perennial herb that is found only in the Onyx Peak area. It blooms April through May and also can be found in granitic rocky soils in cismontane woodland habitats. The Kern County evening primrose is another annual herb that blooms in May. It is typically found in sandy granitic soils associated with Joshua tree woodlands in Kern County. Charlotte's phacelia is an annual herb species that occurs on sandy, rocky granitic slopes also associated with Joshua tree or pinyon juniper forests. It blooms between March and June.

Information regarding these species, including data sources, potential for presence on the property, and rarity rating explanations are presented in Appendix E - CNDDB.


willow flycatcher
tricolored blackbird
Central Valley Drainage Hardhead/
Squawfish Stream
southwestern pond turtle
summer tanager
tricolored blackbird
Great Valley Cottonwood Riparian Forest
178
178
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Element Type
Animal
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CALIFORNIA

IV. MANAGEMENT GOALS AND ENVIRONMENTAL IMPACTS

The management recommendations encompassed in this Plan are meant to fulfill the purposes of the acquisition of the CER, as well as the Department's Mission "to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public". With this in mind, management of the CER will be focused on maintaining or enhancing the unique assemblage of species of the CER, while seeking to also develop opportunities for the public to visit and appreciate the very resources that define that biodiversity. A balance between habitat protection, public use, and infrastructure support must be attained. In order to do this, many assessments and analysis must first be done. Then further planning giving full consideration to all factors will lead to implementation of sound management practices that will meet the purposes of this Management Plan. This Chapter of the CER Management Plan provides the comprehensive structure for these actions.

A. Definitions of Terms Used in This Plan

1. Element: An element refers to any biological unit, public use activity, or facility maintenance program as defined below for which goals have been prepared and presented within this plan.

2. Biological Element: These elements consist of species, habitats, or communities for which specific management goals have been developed within the plan.

3. Public Use Element: Public use elements are any recreational, scientific, or other use activity appropriate to and compatible with the purposes for which this property was acquired.

4. Facility Maintenance Element: This is a general purpose element describing the maintenance and administrative program which helps maintain orderly and beneficial management of the area.

5. Biological Goal: A biological goal is the statement of intended long-range results of management based upon the feasibility of maintaining, enhancing or restoring species populations and/or habitat.

6. Public Use Goal: A public use goal is the statement of the desired type and level of public use compatible with the biological element goals previously specified within the plan.

7. Tasks: Tasks are the individual projects or work elements which implement the goal and are useful in planning operation and maintenance budgets.

B. Biological Elements

Element: ***Great Valley Cottonwood Riparian Forest***

Description**:**

Great Valley Cottonwood Riparian Forest occurs over 11% of the property. This habitat type is characterized by Fremont cottonwood (*Populus fremontii*) and red willow (*Salix laevigata*) with an understory of various herbaceous species occurring adjacent to the river, creek and ditches. Formerly widespread, this riparian habitat is declining throughout California and is currently the focus of preservation and protection efforts wherever it occurs. Stands are mature over the majority of its distribution on the CER. This habitat type is highly productive in numbers of wildlife species which utilize it, including the greatest number of sensitive species of any habitat occurring on the CER. For these reasons valley foothill riparian habitat will be managed specifically. Management of this habitat type is intended to benefit a large number of species.

The southwestern willow flycatcher (*Empidonax traillii extimus)* is listed as a California and Federal "Endangered" species. The highest breeding population of the southwestern willow flycatcher in California occurs in the South Fork Kern River Valley. This species could be expected to increase its breeding population size considerably with development of valley foothill riparian habitat, especially with a dense understory component. To date, no reproduction of these species has been detected on the property. Brown headed cowbirds are nest parasites of this species and research suggests inhibiting its recovery.

The yellow-billed cuckoo (*Coccyzus americanus* var. *occidentalis*) is listed as "Endangered" by the State of California and is Federal candidate species for listing. Habitat requirements of the yellow-billed cuckoo include large areas of valley foothill riparian habitat and although it has not been observed on the property it is known to occur nearby and could be expected to utilize the property if key habitat were developed there. It is estimated that 5-10 pairs of this bird could utilize the property if sufficient habitat were developed.

As this habitat type improves on the property it is possible the least Bell's vireo (*Vireo bellii pusillus*), a California and Federally listed "Endangered" species which has been extirpated from the South Fork Kern River Valley, could potentially re-colonize the site or may be a candidate for reintroduction there. Greatly improved habitat conditions would be indicated should this species again survive on the property.

Southwestern willow flycatcher and western yellow-billed cuckoo will be used as monitor species to gauge the effectiveness of habitat management practices. Annual bird counts document species diversity of riparian obligates in this habitat type as an additional indicator of habitat health.

With direction from the Interim Draft Management Plan for the CER, 8 acres of this habitat type were added to the property with the planting of approximately 7000 plants, including Cottonwoods 31%, Red Willow 20%, Arroyo Willow 13%, Mulefat 18%, and the remainder in wildrose, Oregon ash, stinging nettle, mugwort and native cane by the Kern River Preserve with Cal State Fresno in the late 1990's. The site of this habitat creation was on part of an irrigated pasture near the Rock House. Further planning and study has identified several other potential sites for riparian forest habitat creation throughout the BR Unit, adjacent to existing stands. Each of these sites is a field or pasture where water availability for irrigation is good and provided directly off of the property's ditch network.

Goals:

1. Ensure that adequate levels of protection are provided as necessary to maintain the current extent of riparian forest habitat.

2. Expand this habitat to areas that have good potential for long term success and viability.

3. Manage this habitat type for the benefit of the southwestern willow flycatcher and yellow-billed cuckoo.

4. Ensure successful management by assessing species response.

Tasks:

1. Monitor riparian forest - Periodic monitoring (every two years) of the riparian forests will be conducted to determine the status of this habitat type and document any changes to its quality or distribution. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Region's Lands Management Staff for review.

2. Protect riparian tree forest habitat – construct, maintain, or replace any structures necessary to exclude the forests from disturbance if necessary, or allow for discretionary management promoting forest vigor and recruitment.

3. Monitor rare species presence and use of riparian habitats- Bird surveys will be conducted annually for overall species abundance and specifically for southwestern willow flycatcher and yellow billed cuckoo abundance, distribution and reproductive efforts. These surveys will be carried out in coordination with ongoing surveys of this type occurring throughout the South Fork Kern River Valley.

4. Utilize the results of monitoring of habitat and rare species to adjust management actions- Adjust the grazing regime as per recommendations made from

monitoring results to promote habitat attributes beneficial to the flycatcher and cuckoo. The long term use of grazing as a habitat management tool will be instituted as restoration efforts progress.

5. Control the brown-headed cowbird population – Reduction of brown-headed cowbird population numbers on the property will be achieved utilizing trapping and air gun techniques currently proven safe and effective on the Kern River Preserve and South Fork Wildlife Area. The effort will be ongoing and will involve the use of experienced contractors.

6. Develop a plan for the creation of riparian forest habitats on the sites that have been identified with good potential. This plan should balance the needs of the different habitat components on the CER as well as consider the logistical elements needed to support the management of the entire property. This plan should present at least three different options of timetables and scope, and use a phased approached to allow for adaptive management and changes. This plan will be presented to the Region's Lands Management Staff for review.

Environmental Impacts:

No long term negative environmental impacts are expected to occur as a result of implementation of these tasks. Initial restoration efforts may include the use of limited heavy equipment, such as backhoes, with some soil disturbance in the short term. For the most part, hand tools and minor mechanized equipment, such as two-man augers, will be used to minimize disturbance. In addition, timing of activities will be coordinated so as not to disturb nesting of passerines. Long term environmental benefits, specifically expanded improved wildlife habitat and soil stabilization, will occur as a result of implementation of these tasks.

The use of herbicides may be required for control of exotic plants. In such cases the least environmental impacting techniques and substances will be used. Where the use of herbicides is necessary, treatment will be completed by a Certified Applicator, and under the guidance of the Department's Pesticide Investigations Unit.

The US fish and Wildlife Service is currently evaluating delineation of critical habitat for the southwestern willow flycatcher. It is not certain if the CER will be included in that designation. No biological opinion from that agency regarding potential impacts to the species is required at this time. However, should it appear plan implementation may affect the species those potential impacts will likely be mitigated sufficiently through seasonal closures or limited operating periods.

Should it appear plan implementation may affect the yellow billed cuckoo those potential impacts will likely be mitigated sufficiently through seasonal closures or limited operating periods as well.

Element: ***Sensitive Plant Species***

Description**:**

Six sensitive plant species have the potential to occur on the CER. These include the alkali Mariposa lily (*Calochortus striatus*), Nine Mile Canyon phacelia (*Phacelia novenmillensis*), Calico monkey flower (*Mimulus pictus*), Onyx Peak bedstraw (*Galium angustifolium onycense*), Kern County evening primrose (*Camissonia kernensis kernensis*), and Charlotte's phacelia (*Phacelia nashiana*). All of these species are considered rare and have been placed on the CNPS list. The alkali Mariposa lily is a perrenneial herb that blooms from April through June and typically occurs in alkaline meadows, chapparal, and chenopod scrub habitats of the region. The Nine Mile Canyon phacelia is an annual herb that blooms in May and typically grows in open areas in sandy to gravelly soils, in pinyon/juniper woodland or coniferous forests. The Calico monkey flower is an annual herb that blooms from April through May and occurs in granitic soils, in cismontane woodlands and broadleaved-upland forests. The Onyx Peak bedstraw is a perennial herb that is found only in the Onyx Peak area. It blooms April through May and also can be found in granitic rocky soils in cismontane woodland habitats. The Kern County evening primrose is another annual herb that blooms in May. It is typically found in sandy granitic soils associated with Joshua tree woodlands in Kern County. Charlotte's phacelia is an annual herb species that occurs on sandy, rocky granitic slopes also associated with Joshua tree or pinyon juniper forests. It blooms between March and June.

Suitable habitats for each of these species occur throughout the CER and its Joshua tree, pinyon/juniper, and foothill woodland forests. Potential threats to these rare species include cultivation, grazing, development, and off-highway vehicles. To date, no surveys to detect these species have been conducted. A general vegetation survey completed in 2004 did find Onyx Peak bedstraw on the CER. Since it is likely that most, if not all, of these species occur on the CER, then management for this Element should achieve the objective of maintaining viable populations of these plant species by utilizing appropriate protection measures and the principles of adaptive management.

Goals:

1. Determine presence and distribution of sensitive plant species on the CER.

2. Ensure that adequate levels of protection are provided as necessary to maintain those populations.

3. Assess species response to management actions.

Tasks:

1. Conduct a survey targeted towards detection of the above -mentioned species throughout all of the potential suitable habitats on the CER. General

guidelines/protocols for this survey are attached in Appendix D. The results of this survey will be presented to the Region's Lands Management Staff for review.

2. Monitor sensitive plant populations on a regular basis. Develop a monitoring plan and schedule to track the status of the populations. This monitoring plan will follow the guidelines specified in Appendix D. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Regional Management for review.

3. Construct, maintain, or replace necessary protection enclosures.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits, specifically the protection of sensitive plant species, will result as a result of implementation of these tasks.

Element: ***Joshua Tree Forests***

Description**:**

Joshua tree forests occur over 4% of the property and are also associated marginally with the present valley foothill riparian habitat. Joshua tree forests usually occur at moderate elevations along the periphery of the Mohave desert, in broad valleys with deep alluvial soils. Joshua trees provide important habitat considerations for many species of wildlife since they provide a dominant stature to the surrounding sagebrush landscape. Shelter, perches, lookout posts, and nest sites are some of the important uses of these structures. Several dozen acres of this habitat type on the BR Unit were converted to agricultural use by previous owners. Those acres now have reverted to what can generally be described as rabbitbrush scrub habitat, proceeding with the expected succession cycle of this vegetation community. Management of this Element should achieve the general objective of maintaining and expanding this habitat type that adds to the CER's impressive biodiversity.

Goals:

1. Ensure that adequate levels of protection are provided as necessary to maintain the current population.

2. Expand the population to areas that were previously occupied by this habitat type.

Tasks:

1. Monitor Joshua tree forest - Periodic monitoring (every two years) of the Joshua tree forests will be conducted to determine the status of this habitat type and document any changes to its quality or distribution. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Region's lands Management Staff for review.

2. Protect Joshua tree forest habitat – construct, maintain, or replace any structures necessary to exclude the forests from disturbance if necessary, or allow for discretionary management promoting forest vigor and recruitment.

3. Develop a Joshua tree forest habitat reforestation plan - Should research prove encouraging, a plan for enhancing Joshua tree forest habitat will be developed. Areas of reforestation will be targeted to those that were likely previously occupied by this habitat type.

4. Implement Joshua tree forest reforestation plan – Following development of a plan for enhancing Joshua tree forest habitat that plan will be implemented by Department personnel and by contract, if necessary, as per the plan guidelines.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***Sagebrush/Rabbitbrush Scrub***

Description:

Sagebrush scrub occurs over 36% of the property. Although identified as sagebrush habitat by WHR, this habitat type is characterized much less by sagebrush (*Artemisia tridentata*) than by rabbitbrush (*Chrysothamnus nauseosus*) on the property and may be more correctly identified by the CNDDB rabbitbrush scrub designation. It occurs on the low slopes east of the river riparian zone and appears to be the primary habitat type disturbed by cultivation efforts except possibly in the field east of the Ranch. Where this shrub habitat occurs east of the river in the southern half of the BR Unit it is associated with an overstory of Joshua tree (*Yucca brevifolia*).

Goals:

1. Maintain existing stands of sagebrush scrub, with the exception for any areas where reestablishment of Joshua tree, or riparian forests are proposed.

2. Allow for the natural reestablishment of sagebrush scrub in areas previously dominated by that habitat type.

Tasks:

1. Monitor this habitat type - Periodic monitoring (every five years) of the sagebrush/rabbitbrush scrub habitats will be conducted to determine the status of this habitat type and document any changes to its quality or distribution. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Region's Lands Management Staff for review.

2. Enact any protection measures that are deemed necessary to maintain this habitat. This would likely involve the placement and maintenance of fencing to allow for discretionary grazing treatments promoting sagebrush/rabbitbrush vigor and recruitment.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***Valley Foothill Hardwood-Conifer/Blue Oak-Gray Pine and California Juniper***

Description**:**

Together, these habitats cover over 16% of the property. Typical of the higher elevations of its distribution, the gray pine habitat type is characterized primarily by gray pine on the property with a few oaks occurring in some locations. The presence of California juniper characterize this habitat type. These habitats are found mostly along the higher elevations of the CER, on the steeper slopes, and occur in abundance in the CC Unit. Several acres of this habitat type were disturbed by wildfire about ten years ago. Wildfire is an important natural occurrence in this habitat type. A tremendous number of wildlife species utilize these habitats for food (nuts, berries, etc.), and shelter as they provide a transition between the coniferous forests above and the alluvial valleys below.

Goals:

1. Maintain existing stands of valley foothill hardwood-conifer/blue oak-gray pine and California juniper habitats.

2. Allow for the natural reestablishment of these habitats in areas previously disturbed, especially by wildfire.

Tasks:

1. Monitor this habitat type - Periodic monitoring (every five years) of these habitats will be conducted to determine their status and document any changes to their quality or distribution. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Regional Management for review.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***Wet Meadow***

Description**:**

Wet meadow habitat occurs only 1% of the property primarily north of the ponded area. This meadow area may vary in size annually depending on water table fluctuations, precipitation and occasionally beaver damming of the pond outflow. This habitat type is characterized by very moist soils which support a variety of low growing herbaceous species.

Goals:

1. Ensure that adequate levels of protection are provided to maintain existing stands of wet meadow habitat.

Tasks:

1. Monitor this habitat type - Periodic monitoring (every five years) of this habitat will be conducted to determine the status of this habitat type and document any changes to its quality or distribution. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Region's Lands Management Staff for review.

2. Enact any protection measures that are deemed necessary to maintain this habitat. This would likely involve the placement and maintenance of fencing to allow for discretionary grazing treatments promoting vigor and recruitment.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***Fresh Emergent Wetland***

Description**:**

The fresh emergent wetland habitat type, characterized by standing water, includes the open water of the pond west of the main housing area and is less than one acre, less than 1% of the property. The shores support a dense stand of cattails representing the only example of this habitat type on the property. Western pond turtles (*Clemmys marmorata pallida*) are known to occur here and could be monitored as an indicator of habitat health.

Goals:

1. Ensure that adequate levels of protection are provided to maintain existing wetland habitat.

Tasks:

1. Monitor this habitat type - Periodic monitoring (every five years) of this habitat will be conducted to determine the status of this habitat type and document any changes to its quality or distribution. Monitor the presence of western pond turtles as an indicator of disturbance. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if specific protections are warranted. This report will be presented to the Region's Lands Management Staff for review.

2. Enact any protection measures that are deemed necessary to maintain this habitat. This would likely involve the placement and maintenance of fencing to allow for discretionary grazing treatments promoting vigor and recruitment.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***Irrigated Pastures and Fields***

Description**:**

Since early settlement of the area, irrigated pastures have been developed on the CER to support cattle grazing. This habitat type is characterized by grasses and herbaceous species promoted through irrigation and livestock grazing manipulation to provide forage for cattle. These areas also provide forage for wildlife and if allowed to gain height may provide habitat for ground nesting. There are approximately 90 acres of irrigated pastures on the northern half of the BR Unit of the CER. Because of the associated irrigation ditches and channels, these pastures also provide ideal locations for riparian forest habitat creation.

These artificial habitats play two key roles on the CER. One is their use, current and potential, as wildlife habitat. The other is their use as part of the support for maintaining historic livestock management on the property. Grazing is an important tool that will be used to manage the habitats on the CER for their best use by wildlife. Therefore, management of this Element must achieve the general objective of promoting a balanced use of these pastures for both of these roles.

Goals:

1. Plan for the balanced use of pastures between wildlife habitat and cattle forage.

2. Manage for the current use and health of the pastures.

Tasks:

1. Develop and implement a plan for conversion of irrigated pastures and fields – A plan will be developed for the conversion of no more than 30 acres of irrigated pastures for creation of valley foothill riparian habitat to benefit wildlife. Conversion of these fields will be done in multiple phases, over a span of ten years.

2. After complete implementation of the plan, an assessment will be done to analyze the benefits gained, and whether further pasture conversion should be pursued.

3. Continue irrigation and livestock use of pastures to maintain their condition. Pastures will not be allowed to completely dry up and become fallow. Pastures will also not be overgrazed where vegetation cover becomes less uniform and spotty.

4. Monitor the overall health and condition of irrigated fields. On an annual basis, the fields will be examined for signs of improper management. If necessary, adjustments to management (irrigation cycle, grazing, etc.) will be recommended and implemented.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks, except that converted pastures and fields will not be available for agricultural production. The loss of agricultural uses will be gradual to mediate any impacts those changes might bring about. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***California Annual Grassland***

Description**:**

California Annual Grassland occurs over 868 acres, or roughly 22% of the CER. It is found throughout the CC Unit, and in the northern and central portions of the BR Unit. It is characterized by the presence and dominance of many species of annual grasses such as *Bromus* and *Erodium*. These grasslands provide habitat for wildlife and forage for cattle. Grazing will be used as a management tool to promote range health and habitat maintenance for wildlife, especially in the central portion of the BR Unit and in the CC Unit.

The large grassland field that occurs in the north and eastern portion of the BR Unit is a formerly cultivated landscape that has become fallow from lack of regular irrigation. This field provides a potential site for establishment of irrigated pastures for multiple uses, as discussed in the "Irrigated Fields and Pastures" Element. Establishment of this field as livestock pasture will move the grazing pressure to an area well away from much of the riparian habitats. This action will further insulate an important habitat component of the CER from potential disturbance, while also maintaining the support structure necessary to retain livestock grazing as a readily available management tool on the property.

Goals:

1. Protect and maintain grasslands as wildlife habitat in the CC Unit and in the central section of the BR Unit.

2. Assess the management possibilities for the large grassland field that occurs on the BR Unit, east of the Ranch. Pursue the option that best facilitates the purposes of the CER

Tasks:

1. Monitor this habitat type - Periodic monitoring (every five years) of these grasslands will be conducted to determine their status and document any changes to their quality or distribution. At the end of each monitoring session, a status report will be prepared that assesses the populations' health and determines if

specific protections are warranted. This report will be presented to the Region's Lands Management Staff for review.

2. Examine and assess the potential for establishment of irrigated pasture in the grassland east of the Ranch. Points of consideration should include the expenses of implementation, as well as the benefits of developing additional forage for livestock needed to support habitat management. Other uses should be considered including grassland-dependent wildlife habitat needs, such as ground nesting birds, including many game species. This assessment should also take into account water availability for irrigation. Management of these fields will not constrain the management of other components of the CER. This assessment will be presented to the Region's Lands Management Staff for review and consideration of implementation.

Environmental Impacts:

No negative environmental impacts are expected to occur as a result of implementation of these tasks. However, environmental benefits in the form of enhanced wildlife habitat will occur as a result of implementation of these tasks.

Element: ***Aquatic Habitat***s

Description:

This element includes riverine, lacustrine, and to some extent fresh emergent wetland habitats. Riverine and fresh emergent wetland are both considered rare by CNDDB criteria. Lacustrine habitat on the property includes habitat for the southwestern pond turtle. Riverine habitat on the property historically supported Kern River rainbow trout and may potentially support this species in the future. These habitats are unique and firmly interconnected with actions of upstream and downstream land and water users. Upstream users may impact water quality through grazing practices, timber harvest and development. These users include private landowners and public landowners, including the USFS, BLM and their grazing and timber lessees. Conversely, the Department has a responsibility to maintain the quality of water flowing from the property to downstream users. As it can be demonstrated that improvement of riparian habitat also enhances water table levels and that a healthy environment will also result in improved water quality conditions, it is hoped that downstream users will benefit from the management procedures presented in this plan. In addition, increased vegetation at the upper end of the valley may reduce water velocity during flood events and possibly reduce damage to downstream properties. Of course, these actions will be coordinated with flood management mandates.

Protecting and enhancing the aquatic habitats is the general management objective for this Element. In order to fulfill that objective, an assessment of the aquatic habitats must be done. A necessary first step in assessing the aquatic condition at the site is to conduct a resource assessment survey. This should include (1) a detailed assessment of

the aquatic habitat, and (2) a thorough inventory of species present. Based upon this data, recommendations could then be made regarding the management direction of the property. For example, it is not known to what extent potential habitat exists for salmonids on the property, if at all. Furthermore, if there is potential habitat, 1

Goals:

1. Protect and enhance aquatic habitats.

2. Assess the quality of aquatic habitats and determine the current distribution of aquatic species within the site.

Tasks:

1. Coordinate with upstream and downstream land and water users to address impacts to aquatic habitats of the property and reconcile issues of management procedures should they arise.

2. Pursue the reintroduction of Kern River rainbow trout through site preparation, propagation and stocking.

3. Eradicate bullfrogs to promote productivity of southwestern pond turtle.

Environmental Impacts:

Biological Element goals and objectives have been designed to improve environmental conditions. As such the overall impact of implementing this plan is expected to be positive in terms of environmental conditions. Development of habitat as planned is not considered significant construction and no adverse environmental impact is anticipated. As it may be possible the construction of a fish barrier would affect water flow, this procedure will be studied thoroughly and modified as needed to minimize any impacts prior to construction. See Appendix H for a completed environmental checklist.

B. Public Use Elements

Element: ***Access***

Description:

Access is a primary issue of public use. Use of the property must necessarily be limited if habitat quality is to be conserved. As per Title 14 of the California Code of Regulations, Chapter 11, "Public entry and use of ecological reserves shall be compatible with the primary purposes of such reserves…". The purposes for which access will be allowed and suitable access sites must be clearly identified both as a management

direction and on the ground. Initially this will include access for property maintenance, habitat and species management, and scientific and educational purposes. Additionally, access to public lands adjacent to the property has been determined to be an important aspect of this element. Reciprocal access agreements have also been made with adjacent landowner Carl Allen strictly for administrative uses and specifically not for general public access.

Goals:

1. Assess the access needs and potential for the CER.

2. Facilitate appropriate access of the CER.

3. Manage access to provide a balance of habitat protection and public use need.

Tasks:

1. Determine access needs – Compile a list of specific access needs from a variety of sources. Department personnel, local outdoors associations, CER neighbors, other government agencies, and staff of the Kern river preserve should be queried about their specific desired access needs of the CER. This should be done in the form of an outreach letter that requests the return of a completed questionnaire.

2. Develop access plan – A plan designed to address identified access needs will be developed by Department personnel. This plan will consider the results of the access survey, and the needs of CER management. Above all, it will encourage facilitation of access that satisfies the expressed needs, without jeopardizing the habitats and species found on the ER.

3. Implement access plan – Implementation of the access plan will be ongoing with priorities assigned as required by habitat protection and enhancement efforts.

4. Monitor access- Access of the property will be annually monitored to determine the level of success of implementation of the plan. Changes necessary to adequately carry out the goals of the Biological Elements of this Management Plan will be made to ensure natural resource protection.

Environmental Impacts:

Goals, objectives and tasks of the public use elements have been designed primarily to avail the public of existing resources. Only minor alteration of existing structures is planned and no significant adverse environmental impacts are anticipated.

Element: ***Nature Study***

Description:

Nature study is expected to be the primary scientific and educational public use which will occur on the property. It will be encouraged for the value that such activities provide in support of property habitat management practices and wildlife conservation in general.

Goals:

1. Identify opportunities for research, birdwatching, photography and other forms of nature study.

2. Encourage and develop those opportunities.

Tasks:

1. Establish information station – An information station at the public access point of the BR Unit will be established to educate the public regarding the resources of the property and its proper use. The station will be a simple kiosk that should provide educational materials along with contributions from interested and appropriate organizations.

2. Produce property guide map – A property guide map will be produced by the Department for distribution to visiting public.

3. Encourage development of research opportunities – An outreach effort will be initiated to encourage development of research opportunities. This effort should be done in partnership with the Kern River Preserve.

Environmental Impacts:

Goals, objectives and tasks of the public use elements have been designed primarily to avail the public of existing resources. Only minor alteration of existing structures is planned and no significant adverse environmental impacts are anticipated.

Element: ***Information and Education***

Description:

The unique assemblage of habitats and species present on the property provide an equally unique opportunity for informing and educating the public in the preservation of those species and habitats. The public will be encouraged to utilize this opportunity with the ultimate purpose of developing a public knowledgeable in wildlife management and conservation.

Goals:

1. Identify opportunities for informing and educating the public regarding the resources and management of the property.

2. Develop those opportunities.

Tasks:

1. Develop an Interpretive Program Plan for the CER- A plan assessing the educational opportunities will be prepared. This plan will make specific recommendations regarding the development of those opportunities to best serve the visiting public. Enhancement of the existing public access trail should be considered a primary recommendation. In addition, that development of interpretive facilities such as signs and kiosks should be considered for the entrance road to the CC Unit. A Long term concept of a more formal Visitor Center should also be assessed.

2. Implement some of the initial, smaller scale opportunities recommended in the Interpretive Program Plan. These likely would focus on enhancements to the trail and development of a simple facility at the CC Unit.

3. Coordinate with schools and organizations – An effort to coordinate with schools and organizations will be initiated to provide field trip opportunities.

Environmental Impacts:

Goals, objectives and tasks of the public use elements have been designed primarily to avail the public of existing resources. Only minor alteration of existing structures is planned and the actual area of the Highway 178 turnout will not be expanded. No significant adverse environmental impacts are anticipated.

Element: ***Hunting***

Description:

Hunting is not currently allowed on the CER. The access constructed through the northern portion of the BR Unit was developed in part to allow hunter access to public lands, both BLM and US Forest Service administered lands, to the north of the property. The presence of year round livestock on the BR Unit places constraints on the ability to provide quality hunting opportunities. However, an assessment should be done to analyze the hunting opportunities that may develop as management of the different Elements of this Plan move forward. For instance, seasonal movement/management of cattle should consider providing hunting opportunities as a secondary purpose to habitat maintenance and enhancement. These opportunities are really only likely to arise in the central and

southern portions of the BR Unit where upland game birds are present. Because of the proximity of numerous private residences in Cap Canyon, hunting on the CC Unit will not be considered. As new parcels are added to the CER, an assessment of hunting opportunity should be completed.

Goals:

1. Provide support for the hunting public to the extent possible on the CER.

2. Maintain the current access through the BR Unit.

3. Regularly assess the hunting opportunities on the CER.

Tasks:

1. Maintain access route to BLM and US Forest Service administered lands – The access trail from the Highway 178 turn out parking area to BLM and US Forest Service administered lands will be maintained in a clear and functioning condition. This will require periodic, likely quarterly depending on growing conditions, vegetation chopping and removal (see Facility Maintenance Elements).

2. Provide hunting-related information at the Information Kiosk. Regulations regarding the CER and hunting in general should be posted for easy reference.

3. Monitor use of access trail by hunters by providing a survey card collection station. Users can voluntarily fill out the cards and deposit them in a collection box at the Kiosk. The cards will seek information regarding the hunting experience and provide an opportunity for new suggestions and feedback.

Environmental Impacts:

Goals, objectives and tasks of the public use elements have been designed primarily to avail the public of existing resources. Only minor alteration of existing structures is planned and no significant adverse environmental impacts are anticipated.

Element: ***Fishing***

There is potential to provide fishing opportunities on the ER to the public. The first step will be to (1) conduct a thorough assessment of what species currently occur, (2) determine if there is adequate habitat to support a fishery, and (3) determine the risks and benefits to the native ecosystem in managing the area for fishing opportunities. The first two steps should include a population assessment of the fish species on the reserve to ascertain the health of the populations with regard to various life stages, and an assessment of the habitat that includes habitat for various life stages, including spawning, rearing, and adult life stages. This should include a survey of water quality in various

seasons, including temperature and oxygen regimes, suspended sediments, and various chemicals. It should also include an assessment of the physical structure of the stream, including substrate composition, microhabitat features, slope, and various geomorphic features of the river.

Once the condition of the river is known, it will be possible to determine the most appropriate species or group of species for which to manage a fishery. The next step will be to determine whether or not managing for that fishery would be detrimental to the native species on the reserve. For example, it may be that providing fishing opportunities would increase the likelihood of spreading invasive species that do not currently occur on the reserve, or we may determine that the only potential fishery is non-native, and it may not be detrimental to increase the populations of nonnative species at that site. These issues cannot be assessed until we possess the baseline information that would be gained in the first two steps discussed above.

C. Facility Maintenance Elements

Element: ***Roads***

Description:

There are several miles of dirt roadway on both Units of the CER. Various levels of use are currently experienced by segments of this road system. On the BR Unit, road use is limited to administrative use by Department personnel, the leasee/caretaker, and adjacent landowners (exercising their right to access and maintain their ditches on the CER). All of these roads are secured by locked gates and posted with signs prohibiting unofficial access. On the CC Unit, road use is not limited. All of the adjacent landowners in Cap Canyon utilize the main access road to get to their residences. General public access to the CC Unit will be gained from this road. The need for safe and functional roads is obvious. It is expected that at least a portion of these roads will require periodic grading depending on weather and use.

Goal:

1. Maintain roads and parking areas in functional and safe condition.

Tasks:

1. Survey roads and parking areas – Roads and parking areas will be surveyed annually for needed repairs. Surveys will be conducted by Department personnel.

2. Repair roads and parking areas – Roads and parking areas will be repaired as needed. Repairs will be completed by Department personnel when possible and by contract, if necessary.

Environmental Impacts:

As facility maintenance goals, objectives and tasks relate to the maintenance of existing elements no significant environmental impacts are anticipated.

Element: ***Fences***

Description:

Currently fences surround the pasture areas and the periphery of the property. These fences are in various states of repair. The need for fencing is expected to change as this plan is implemented. Different areas will have different cattle exclusion requirements and potentially hazardous unnecessary fencing will have to be removed as the public begins to utilize the property. Eventually all fencing deemed to be necessary for management will be replaced to meet adequate specifications. Currently, there is a need for a complete survey of the CER's fencing and a plan drawn up to specify where and when fence replacement will occur.

Goals:

1. Assess the current condition of the fencing system.

2. Provide safe and functional fences for protection and management of the species, habitats and the public.

Tasks:

1. Survey fences – Conduct a complete survey of the existing fence system to determine if it meets the recommended needs of management.

2. Prepare a fencing replacement plan that considers the results of the survey, and the management recommendations of the tasks called for in the Biological Elements of this management Plan.

3. Maintain functional fences – Fences will be constructed, repaired or removed according to recommendations of the fencing replacement plan and as needed. Fence maintenance will be completed by Department personnel when possible, by the caretaker currently grazing cattle on the property and by contract, if necessary.

Environmental Impacts:

As facility maintenance goals, objectives and tasks relate to the maintenance of existing elements no significant environmental impacts are anticipated.

Element: ***Structures***

Description:

As described previously, there are a number of structures on the BR Unit in varying states of utility. If the use of currently functional structures is to be continued they will necessarily require maintenance to keep them in safe and functional condition. Also, if currently non-functional structures are to be used they will have to be renovated as well as regularly maintained. If non-functional structures are not to be used these structures may be torn down.

Goals:

1. Provide safe and functional structures for protection of the species and habitats of the property and the public.

2. Maintain structures in safe and functional condition.

Tasks:

1. Survey structures - Structures will be surveyed annually for utility to property management purposes and needed repairs. Surveys will be conducted by Department personnel.

2. Repair or remove structures as needed – Structures will be repaired or removed according to recommendations of the annual survey and as needed. Structure maintenance will be completed by Department personnel when possible, by the caretaker currently grazing cattle on the property and by contract, if necessary.

Environmental Impacts:

As facility maintenance goals, objectives and tasks relate to the maintenance of existing elements no significant environmental impacts are anticipated.

Element: ***Irrigation System/Ditches***

Description:

The BR Unit has several miles of irrigation ditches and canals that are, or have been used to water pastures for cattle forage. This irrigation network will also be used to sustain the riparian forests that will be created on the CER. Maintaining this network is critical to the management needs of the CER. Without the functional ability of this system, many acres of riparian forest habitat would be degraded or lost. Regular maintenece including sediment and vegetation removal are necessary to keep adequate levels of water flowing through the ditches. In addition, placement of temporary weirs in

the bed of the South Fork of the Kern River at the main ditch's out-take is necessary. Regular replacement of individual water diversion gates and structures is expected. Activities associated with the operation and maintenance of this system will give consideration to habitat and species needs. Regular maintenece will be scheduled so as not to interfere with breeding birds or reptiles. Therefore most maintenance activities will occur in the winter when river flows will also be low. If an action is required in response to an unexpected event such as an emergency, the option that causes the least disturbance will be pursued. However, the maintenance of the full functional capability of this network will be the main management objective of this Element.

Goals:

1. Maintain the irrigation network so that it has the capability to fully meet the irrigation needs of the CER.

Tasks:

1. Regularly inspect the irrigation network for evidence of failure. Determine the need and immediacy of repair.

2. Conduct repairs in a manner so as to cause as little disturbance to the sensitive resources of the CER (timing, choice of equipment).

3. Conduct preventative maintenance on network by removing sediment and understory vegetation form ditches during the winter period. Sediments should be placed as evenly as possible and in places so as to minimize disturbance and avoid runoff into natural waterways.

4. Use natural materials to maintain weirs needed for water diversion. The use of riverbed rocks and plastic are suitable as long as they are removed when not needed.

5. Conduct a comprehensive survey of the entire irrigation system to identify long term repair needs.

6. Develop a plan with recommendations and an implementation schedule to meet those long term repair needs. This plan will be submitted to the Region's Lands Management Staff for review.

Environmental Impacts:

As facility maintenance goals, objectives and tasks relate to the maintenance of existing elements no significant environmental impacts are anticipated. Timing and scope of work recommendations that are proposed give consideration to minimizing and avoiding impacts to the natural resources. In addition, the actions proposed in the element

are critical to providing management support for the benefit of the habitats and species found on the CER.

Element: ***Public Access Trail***

Description:

There is a mile long trail that leads from the public parking lot on the BR Unit to near the northeastern boundary of the CER. This trail is on average 14 to 16 feet wide and is similar in appearance to a dirt road. Because of this, it is susceptible to being overrun with invasive weeds and erosion. This trail is also fenced along both sides for most of its length to prevent cattle trespass and public access onto adjacent portions of the CER. There is also a large wooded footbridge where the trail crosses canebrake creek.

Goals:

1. Provide full use and safe access of the trail.

Tasks:

1. Annually inspect trail and bridge for repair needs due to erosion or environmental conditions.

2. Conduct repairs necessary to keep trail in a safe and passable condition.

3. Regularly treat weed infestations to keep trail in a safe and passable condition. Specifics of this treatment will follow the procedures established in the Invasive Weeds Element of this Management Plan.

Environmental Impacts:

As facility maintenance goals, objectives and tasks relate to the maintenance of existing elements no significant environmental impacts are anticipated. Timing and scope of work recommendations that are proposed give consideration to minimizing and avoiding impacts to the natural resources. In addition, the actions proposed in the element are critical to providing management support for the benefit of the habitats and species found on the CER.

V. OPERATIONS AND MAINTENANCE SUMMARY

Attached in Appendix F is a table summarizing the anticipated costs associated with meeting the tasks specified in this Management Plan. Currently, there is only 0.1 PY (Personnel Year) of Department staff time regularly assigned to the management of the

CER. This works out to about 21 days of time that is spread out among various Region staff working in classifications such as Environmental Scientist, Associate Biologist (Botany), Associate Biologist (Wildlife), Game Warden, and Scientific Aid. Most of the current on-the-ground maintenance of the facilities is conducted by the property leasee/caretaker that operates the livestock on site. This constitutes a tremendous workload at times, especially concerning the operation of the water system. If recommended staffing levels are not fulfilled as proposed, the current encumberence on the leasee/caretaker can probably not continue for too much longer. Some level of staffing assistance will have to be provided just to maintain the facilities present. Their condition, especially that of the irrigation system, cannot be allowed to degrade any further. The priority system expressed in the table reflects this, as well as considers the biological needs of the CER.

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